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## Mass spring migration of European Rollers *Coracias garrulus* in eastern Tanzania

by C. J. Feare

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It is well-known that vast numbers of European Rollers *Coracias garrulus* winter in the savannah regions of East Africa south of the Sahara (Moreau 1972). Ash & Miskell (1980) recorded a mass migration of this species in southern Somalia in spring 1979, and the observations reported here indicate that, as expected, such migration is not an isolated event. During a visit to coastal Tanzania in spring 1982 I was able to record the period over which this mass migration—the evacuation of East Africa by Palaearctic migrants—occurred.

On 22 March, large numbers of rollers were seen during a drive from Arusha to Muheza; and large numbers were present, especially in Sisal *Agave sisalana* plantations, on the following 4 days (23-26 March) in the general area between Muheza and Dar-es-Salaam. Sample counts indicated that the migrants outnumbered the indigenous Lilac-breasted Roller *C. caudata* by over 50:1, as recorded by Moreau (1972). There was no evidence of mass migration on those days.

At about 07.00 on 28 March, large numbers of European Rollers were flying northeast over Muheza. They flew high, at over 300 m, until about 10.00 when heavy rain brought them down to less than 100 m. The northeastward movement was then seen to include European Swallows *Hirundo rustica*, Striped Swallows *H. abyssinica*, a few Mosque Swallows *H. senegalensis*, White-rumped Swifts *Apus caffer* and a Peregrine *Falco peregrinus*. The species composing this migration were therefore similar to those described by Ash & Miskell (1980).

Heavy rain showers continued up to 30 March and the movement of European Rollers continued uninterrupted on 29 and 30 March; but at Tanga, on the coast, the direction of the movement was more northerly. On a journey from Muheza to Maramba on 31 March the number of European Rollers seen in Sisal plantations was much smaller than had been seen earlier

and the northeastward movement continued throughout the day.

On 1 and 2 April my observations were on the coast, mainly around Pangani, south of Tanga. The rain had stopped and these days were predominantly sunny with light southeast winds. A continuous stream of European Rollers migrated up the coast on both days, accompanied by European Swallows and small parties of unidentified falcons. Although the northeastward movement of rollers was seen inland, there was obviously a concentration of birds migrating up the coast. I did not attempt to estimate numbers, but on 1 and 2 April certainly tens of thousands coasted past and the numbers may have reached 6 figures.

On 3 April European Rollers were comparatively scarce on the journey from Pangani to Korogwe with *C. garrulus* and *C. caudata* in about equal numbers. In the Korogwe area, about 100 km inland, migration of European Rollers was still observed on 3 and 4 April, but their numbers and concentration were much lower than on the coast. Furthermore, the direction of migration at Korogwe was east of northeastward, suggesting that the birds were heading for the coast, possibly to avoid flying over the Usambara mountains. On subsequent journeys in the Arusha, Dodoma and Manyoni areas very few European Rollers were seen.

These observations suggest that the mass-migration reported by Ash & Miskell (1980) may be regular. In addition, it appears that the evacuation of the wintering area by European Rollers occurs over a relatively short period, possibly a fortnight or less.

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## Description of the downy young of Lichtenstein's Sandgrouse *Pterocles lichtensteini* and the significance of "unpatterned" downy young in the Pteroclididae

by David H. Thomas and A. Paul Robin

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There does not appear to be any published description of the downy young of Lichtenstein's Sandgrouse *Pterocles lichtensteini* (Harrison 1975), although it is hard to believe that such young have not been seen before by ornithologists. The following description is offered despite being based on a single individual and because the downy young's appearance in this and some other sandgrouse species is unusual in the Pteroclididae. The possible significance of this will be discussed.

Observations were made in the Moroccan Sahara (where Lichtenstein's